

CALIFORNIA STATE DEPARTMENT OF PUBLIC HEALTH

WALTER M. DICKIE, M.D., Director

Weekly Bulletin

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GUY P. JONES
EDITOR

Disinfection of Small Water Supplies

Many official and unofficial agencies have reported that automobile traffic into the summer resort areas of the state is very much higher this year than for several years past. While public water supplies are maintained in the best of sanitary conditions, suspicion may well be directed toward smaller supplies that may not come under official supervision. For this reason it is well for tourists to know how small supplies of water may be disinfected. Such a method of disinfection must be reasonably effective, easily applied, and must be absolutely harmless. Campers, owners of summer resorts and camps may often have need for the use of such emergency disinfection. The directions which follow have been used for many years and have proved efficient in bringing about the purpose for which they were designed. The directions are applicable for the hiker and also for the proprietor of a summer resort who may have need to disinfect a tank supply.

While it is true that boiling of water is the simplest, cheapest and easiest method of disinfection, it is not always possible to use this method. Several common and well known chemicals which may be procured at almost any grocery or drug store are useful for the same purpose. The amounts of such chemicals necessary for this procedure are very small and they are harmless if used as directed. It is recognized that drinking water from surface streams is always an unwise procedure and all domestic water supplies that

are not properly protected against the entrance of human sewage should be regarded as potential sources of disease. By selecting the procedure which applies in the individual case the consumer may be assured of the purity of an emergency water supply. A slight after-taste has no significance, but a distinct unpalatability means that too much of the chemical has been used.

Boiling. A very good means of destroying disease germs in water. Actually boil for at least five minutes. Aeration by splashing, pouring or otherwise, will cool the water and will improve the flat taste.

Disinfection With Iodine. This is a handy chemical in every first-aid kit and also adapted to this purpose of disinfecting water.

For clear waters add 3 drops (such as is obtained with the ordinary eye dropper) of tincture of iodine, per quart. Add 6 drops per quart if the water is colored, cloudy or contains sediment. Enough iodine should be added to give a slight but distinct brown color to the water. Allow the treated water to stand at least fifteen minutes. If it is desirable to destroy the brown color due to the iodine and restore its original appearance, add a pinch of sodium thiosulphate or "hypo"—the chemical used for "fixing" in photographic work.

EXAMPLE: To treat a 3-gallon (12-quart) bucket half-full of clear water; about 6 quarts to be treated. Add 18 drops (3 drops for each quart) of tincture of iodine. Mix and allow to stand at least 15 minutes. Then add a pinch of sodium thiosulphate. If brown color still persists, add another pinch. The water is ready for use.

Disinfection With Household Strength Hypochlorites

This chemical is a solution and contains chlorine and is much used for bleaching, laundry, and sink cleaning purposes. It can be purchased at grocery stores. Household strength sodium hypochlorite is considered here as having 4 to 5 per cent avail-

able chlorine. The strength should be given on the bottle in which it is purchased.

For clear water add the following quantities:

2 drops	-----for each	1 gallon of water
1 teaspoonful	-----for each	50 gallons of water
1 tablespoonful	-----for each	200 gallons of water
1 pint	-----for each	6,400 gallons of water

For cloudy waters or those containing sediment add half again the amounts given above.

Mix, and allow the treated water to stand at least 30 minutes before using.

The residual or excess chlorine may be destroyed by adding sodium thiosulphate—photographer's "hypo"—in amounts about equal to the quantity of hypochlorite added.

After opening, the chemical deteriorates, and should be discarded after a couple of weeks.

EXAMPLE: To treat a 50-gallon barrel full of cloudy water. Add $1\frac{1}{2}$ teaspoonfuls of household sodium hypochlorite solution. Mix, and allow to stand at least 30 minutes. Then add $1\frac{1}{2}$ teaspoonfuls of sodium thiosulphate. The water is ready for use.

Disinfection With Commercial Strength Hypochlorite

Commercial strength sodium hypochlorite is considered here as having 16 to 20 per cent available chlorine. The strength should be given on the bottle in which it is purchased. In terms of actual chlorine, this chemical is cheaper than the household strength. However, it is not so commonly obtainable and is best adapted to treating volumes in excess of 10,000 gallons.

For clear water add the following quantities:

2 drops	-----for each	5 gallons of water
1 teaspoonful	-----for each	250 gallons of water
1 tablespoonful	-----for each	1,000 gallons of water
1 pint	-----for each	25,000 gallons of water

For cloudy waters or those containing sediment, add half again the amounts given above.

Mix, and allow the treated water to stand at least 30 minutes before using.

The residual or excess chlorine may be destroyed by adding sodium thiosulphate—photographer's "hypo"—in amounts about equal to the quantity of hypochlorite added.

The chemical deteriorates after being opened and should be discarded after a couple of weeks.

EXAMPLE: To treat a tank holding 500 gallons of clear water. Add 2 teaspoonfuls of commercial sodium hypochlorite solution. Mix, and allow to stand at least 30 minutes. Add 2 teaspoonfuls of sodium thiosulphate. The water is ready for use.

Disinfection With Chloride of Lime (Bleaching Powder)

Chloride of lime in the form of bleaching powder generally has from 25 to 35 per cent available chlorine when freshly opened. For small quantities of water, purchasing in 1 lb. cans is recommended. The chemical deteriorates after opening. Keep tightly covered and discard what is left after about a week's time. This method is somewhat troublesome and is recommended only when the chemicals for the previous methods are not available.

The quantity required should be first mixed to a thin paste of creamy consistency and this paste diluted with about ten times its volume of water. The inert material should be allowed to settle and the clear liquid added to the water to be treated.

For clear water add the following quantities of powder:

1 level teaspoonful	-----for each	300 gallons
1 level tablespoonful	-----for each	1,000 gallons
1 ounce	-----for each	3,200 gallons
1 pound	-----for each	60,000 gallons

For cloudy waters or those containing sediment, add half again the amount given above.

Mix, and allow the treated water to stand at least thirty minutes before using.

The residual or excess chlorine may be destroyed by adding sodium thiosulphate—photographer's "hypo"—in amounts equal to the quantity of hypochlorite added.

EXAMPLE: To treat a tank holding 2000 gallons of cloudy water. Mix 3 tablespoonfuls of chloride of lime to a thin, smooth paste. Dilute with a quart of water. Allow the inert material to settle and add the top liquor to the tank of water. Mix, and allow to stand at least 30 minutes. Add 3 tablespoonfuls of sodium thiosulphate. The water is ready for use.

CITY HEALTH CONSERVATION CONTEST ANNOUNCED

The American Public Health Association in cooperation with the United States Chamber of Commerce has announced the eighth annual City Health Conservation Contest. The purpose of the contest is to interest the business man in public health and thereby assist in the intelligent fostering and promotion of sound public health practices. Enrollment is made by the secretary of the local chamber of commerce and is forwarded to the Insurance Department of the Chamber of Commerce of the United States at Washington, D. C. Several California cities have secured first place in their respective classifications of population and many have received honorable mention. The American Public Health Association cites the following benefits from the contest:

1. More than 90 per cent of the cities competing in the contests for two or more years show definite improvement in their health programs.
2. More than 3000 business men have become actively identified in public health work through their membership on health committees of local chambers of commerce. Their participation is indispensable.
3. The diminished death rate in contest cities results in an estimated average saving of 5000 lives per year. Death rates are declining faster in the contest cities than in the county as a whole.
4. Improvements made in the control of diphtheria, typhoid fever, smallpox, tuberculosis and the venereal diseases in the last ten years clearly indicate that it is possible to accelerate the decline in death rates by concentrated well directed community efforts.
5. For the first time in the history of public health over 200 cities are now able to make definite reliable statements with regard to their health assets and are presenting such statements in their published reports.

The highlights of the 1935 contest include accomplishments in public health protection which were due in part or largely to the interest and activity of chamber of commerce health committees in those cities which participated in the contest last year. Among these are the enactment of an ordinance in Oakland which requires all operators of milk pasteurizing plants to qualify by passing a competency examination, the raising of a fund by the chamber of commerce health committee in South San Francisco to finance an antismallpox vaccination campaign, and a survey covering a particular aspect of public health work in Pasadena.

Following are the winners of the 1935 contest:

Group I (cities over 500,000 population): The first award goes to Detroit, Mich., and honorable mention to Milwaukee, Wis., and Pittsburgh, Pa.

Group II (cities between 250,000 and 500,000 population): Oakland, Cal., attains the first award, and honorable mention goes to Minneapolis, Minn., and Dallas, Tex.

Group III (cities between 100,000 and 250,000 population): Syracuse, N. Y., wins first place, and honorable mention goes to New Haven, Conn., Springfield, Mass., Grand Rapids, Mich., Reading, Pa., Honolulu, Hawaii, Hartford, Conn., Duluth, Minn., Yonkers, N. Y., and Tacoma, Wash.

Group IV (cities between 50,000 and 100,000 population): Schenectady, N. Y., receives the first award, and honorable mention goes to Pasadena, Cal., Evanston, Ill., Waterbury, Conn., New Rochelle, N. Y., Kalamazoo, Mich., Greensboro, N. C., Binghamton, N. Y., Sacramento, Cal., and Saginaw, Mich.

Group V (cities between 20,000 and 50,000 population): The winner is Brookline, Mass., and honorable mention goes to Auburn, N. Y., Greenwich, Conn., Watertown, N. Y., Santa Barbara, Cal., Pittsfield, Mass., Plainfield, N. J., and Ithaca, N. Y.

Group VI (cities under 20,000 population): Hibbing, Minn., obtains the first prize, and honorable mention goes to Englewood, N. J., Blackwell, Okla., and Miami Beach, Fla.

Special awards were granted to (arranged alphabetically) Baltimore, Md., Hackensack, N. J., Newark, N. J., and Palo Alto, Cal.

It will be noted that Oakland, Pasadena, Sacramento, Santa Barbara and Palo Alto are included among these winners. Palo Alto has won the first award among cities under 20,000 population several times and is, therefore, ineligible for other than a special award.

PUBLIC HEALTH ADMINISTRATION IN SACRAMENTO

Dr. Herbert F. True, City Health Officer of Sacramento, has issued the report of the Sacramento City Health Department for the year ending December 31, 1935. This report presents a careful and interesting account of the activities of an efficient municipal department of public health.

At a per capita cost of \$0.78, reduced to a net cost of \$0.30 through revenues from fees, the people of Sacramento are provided with adequate safeguards to the health of the community. During 1935 no epidemics of food poisoning occurred in Sacramento, although many outbreaks occurred in various communities scattered throughout the State. Tuberculosis did not increase greatly in prevalence and, as a result of better housing and economic conditions, there was a marked lowering in the number of pneumonia cases.

Rabies was kept under control and Dr. True refers to the fact that the police dog is seen less frequently. Records show that the slashing, cutting injuries from this particular animal are of frequent occurrence. The infant mortality rate rose slightly and a limited outbreak of smallpox occurred. Diphtheria gained a considerable start in one school district, the health officer recording with regret 138 cases with four deaths. Dr. True believes that all of these cases and deaths were avoidable and makes the following comment, "Many parents who will give a child life insurance policy protection and even fire protection against the loss of a home neglect this health protection so vital to the little one." Scarlet fever and measles showed increases in prevalence as was common throughout most of the cities and states.

The Sacramento City Department of Health is organized into twelve divisions—Administration, Public Health Nursing, Child Hygiene, Clinics, Dental Clinic, Emergency Hospital, Laboratories, Sanitation, Food and Market Inspection, Plumbing Inspection, Animal Welfare and Pound, and the Division of Cemeteries. It will be recognized that several of these activities are not ordinarily assigned to a department of public health, although some of the work done by each of such divisions may have a certain public health significance.

The department was entered for the fourth time in the United States Inter-Chamber Health Conservation Contest, advancing to sixth place from twentieth place in 1931 when the original entry was made.

In making a plea for private physicians to take part in the preventive portion of public health work, Dr. True makes the following quotation from an address by Dr. Howard Morrow, President of the California State Board of Public Health:

"Today many children die in the morning of life, and men and women die prematurely from diseases that are controllable or preventable by methods already available.

"These methods are not alone sanitation nor other impersonal procedures such as quarantine, food protection measures, etc., but include that most important need of a close cooperation between patient and physician.

"The full-time public health officer is in a most favorable position to lead in calling the attention of the public to the value of this close physician-patient relationship and to urge its establishment and continuance."

There is an idea abroad among moral people that they should make their neighbours good. One person I have to make good: myself. But my duty to my neighbour is much more nearly expressed by saying that I have to make him happy if I may.—Robert Louis Stevenson.

MORBIDITY

Complete Reports for Following Diseases for Week Ending
July 18, 1936.

Chickenpox

97 cases: Berkeley 4, Oakland 7, Martinez 1, Fresno County 1, Fresno 1, Kern County 3, Los Angeles County 7, Glendale 1, Huntington Park 1, Inglewood 1, Los Angeles 13, Redondo 1, Bell 1, Madera 1, Yosemite National Park 4, Pacific Grove 1, Orange County 4, Anaheim 1, Orange 1, Roseville 3, Corona 1, Ontario 1, San Diego 4, San Francisco 5, Stockton 3, San Luis Obispo County 3, Paso Robles 1, Santa Barbara 2, Los Gatos 13, Palo Alto 5, San Jose 1, Sonoma County 1.

Diphtheria

25 cases: Berkeley 1, Bakersfield 4, Los Angeles County 1, Alhambra 1, Burbank 1, Long Beach 2, Los Angeles 2, Orange County 1, Fullerton 1, Santa Ana 1, Sacramento 1, San Diego County 2, San Diego 2, San Francisco 1, Santa Barbara County 1, Santa Barbara 1, San Jose 1, Sonoma County 1.

German Measles

35 cases: Berkeley 2, Oakland 5, Kern County 1, Huntington Park 1, Long Beach 3, Los Angeles 6, South Gate 1, Fullerton 1, Orange 1, Roseville 1, Coronado 1, San Diego 2, San Francisco 8, Stockton 1, San Mateo County 1.

Influenza

11 cases: Los Angeles County 1, Glendale 1, Long Beach 1, Los Angeles 4, Laguna Beach 4.

Malaria

4 cases: Merced County 1, Marysville 1, California 2.*

Measles

343 cases: Alameda 2, Oakland 18, San Leandro 1, Colusa 1, Contra Costa County 7, Martinez 3, Fresno County 4, Fresno 1, Selma 1, Eureka 2, Kern County 14, Los Angeles County 20, Alhambra 1, Burbank 1, Glendale 1, Huntington Park 1, La Verne 1, Long Beach 6, Los Angeles 143, Monrovia 1, Pasadena 16, San Gabriel 1, South Pasadena 2, Torrance 1, Monterey Park 1, Yosemite National Park 1, Santa Ana 1, Roseville 1, Corona 2, Riverside 2, Ontario 2, San Diego County 7, Coronado 7, National City 1, San Diego 17, San Francisco 24, San Luis Obispo County 2, San Luis Obispo 6, San Mateo County 2, Burlingame 4, San Mateo 1, Santa Barbara County 5, Santa Clara County 5, Santa Cruz 2, Sonoma County 1.

Mumps

286 cases: Berkeley 7, Oakland 3, Butte County 1, Fresno County 1, Fresno 4, Kern County 10, Los Angeles County 10, Alhambra 2, Beverly Hills 3, Burbank 3, Glendale 5, La Verne 1, Long Beach 3, Los Angeles 41, Pasadena 7, Pomona 4, Redondo 1, Santa Monica 2, Whittier 1, South Gate 2, Monterey County 1, Orange County 2, Fullerton 2, Santa Ana 3, Laguna Beach 1, Riverside County 98, Corona 2, Sacramento 8, San Bernardino County 1, Colton 1, Needles 1, San Bernardino 2, San Diego County 6, Coronado 1, National City 2, San Diego 20, San Francisco 1, San Joaquin County 2, Stockton 2, Tracy 4, Paso Robles 1, Santa Barbara 7, Palo Alto 2, San Jose 1, Solano County 1, Fillmore 1, Santa Paula 1, Woodland 1.

Pneumonia (Lobar)

36 cases: Oakland 1, Contra Costa County 1, Martinez 1, Kings County 2, Los Angeles County 6, Los Angeles 13, Pasadena 1, Sacramento 1, San Diego 1, San Francisco 4, San Luis Obispo County 1, Burlingame 1, Daly City 1, Santa Barbara 1, Santa Maria 1.

Scarlet Fever

93 cases: Oakland 4, Butte County 1, Antioch 1, Placerville 1, Fresno County 2, Humboldt County 2, Eureka 2, Kern County 3, Los Angeles County 6, Alhambra 1, Long Beach 1, Los Angeles 9, Pasadena 2, Santa Monica 2, Madera County 1, Marin County 3, Merced County 1, Riverside County 2, Riverside 1, Sacramento County 2, Sacramento 5, Needles 1, San Diego 3, San Francisco 18, Stockton 2, San Luis Obispo County 1, San Mateo County 2, Redwood City 1, Santa Barbara County 1, Santa Barbara 1, Los Gatos 1, Palo Alto 1, San Jose 1, Santa Cruz 1, Shasta County 1, Sonoma County 2, Petaluma 1, Yuba City 1, Woodland 1, Lynwood 1.

Typhoid Fever

8 cases: Colusa 1, Fresno 1, Kings County 1, Los Angeles 1, Nevada County 1, Orange 1, Solano County 1, California 1.*

Whooping Cough

289 cases: Albany 3, Berkeley 6, Oakland 4, San Leandro 1, Concord 4, El Dorado County 1, Kern County 2, Los Angeles County 23, Claremont 1, Glendale 1, Huntington Park 2, La

* Cases charged to "California" represent patients ill before entering the state or those who contracted their illness traveling about the state throughout the incubation period of the disease. These cases are not chargeable to any one locality.

Verne 1, Long Beach 6, Los Angeles 87, San Fernando 4, Santa Monica 4, Lynwood 1, South Gate 1, Madera 1, Mill Valley 1, Orange County 2, Anaheim 3, Fullerton 1, Huntington Beach 1, Orange 1, Santa Ana 3, La Habra 1, Roseville 1, Corona 1, Riverside 1, Sacramento 39, Hollister 3, San Bernardino County 3, San Bernardino 2, San Diego County 2, National City 8, San Diego 34, San Francisco 8, Paso Robles 1, Santa Barbara 3, Santa Cruz 2, Watsonville 2, Siskiyou County 6, Ventura County 7.

Meningitis (Epidemic)

6 cases: Long Beach 1, Los Angeles 3, Stockton 1, Watsonville 1.

Dysentery (Amoebic)

One case: Sonoma County.

Dysentery (Bacillary)

10 cases: Oakland 1, La Verne 1, Los Angeles 5, South Gate 2, Mountain View 1.

Ophthalmia Neonatorum

2 cases: Humboldt County 1, Los Angeles 1.

Pellagra

One case: Oakland.

Poliomyelitis

7 cases: Pittsburg 1, Los Angeles 3, Madera County 1, Orange County 1, San Diego 1.

Tetanus

3 cases: Berkeley 1, Merced County 1, Carmel 1.

Trachoma

2 cases: Westmoreland.

Encephalitis (Epidemic)

One case: San Joaquin County.

Food Poisoning

13 cases: Kern County 8, Burbank 4, San Francisco 1.

Undulant Fever

5 cases: Butte County 1, Los Angeles 1, Pasadena 1, Escondido 1, San Francisco 1.

Tularemia

One case: Santa Maria.

Septic Sore Throat (Epidemic)

2 cases: Sierra Madre 1, San Diego 1.

Relapsing Fever

One case: Tuolumne County.

Rabies (Animal)

17 cases: Berkeley 1, Brawley 1, Los Angeles County 3, Compton 1, Los Angeles 2, Santa Monica 1, Madera 3, San Bernardino 1, San Diego 3, Stockton 1.

The most important personality attribute of the successful teacher is ability to create and foster a sense of vitality and enthusiasm for life. In this sense her attitude should be parental, that is to say, in the interests of health and virility.

Truancy from such a teacher would be rather unlikely.—Miriam Van Waters, Ph. D.

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